COMPUTER SCIENCE – Hybrid Paper (One hour)

J277

1.1 The CPU

The purpose of the CPU
The fetch-execute cycle
Common CPU components and their function
Cache
Registers
Von Neumann architecture
How common characteristics of CPUs affect their performance
The purpose and characteristics of embedded systems
Examples of embedded systems

1.2 Storage

The need for primary storage.
The difference between RAM and ROM
Virtual memory
The need for secondary storage.
Common types of storage
Suitable storage devices and storage media for a given application.
The advantages and disadvantages of different storage devices.
The units of data storage
Data capacity and calculation of data capacity requirements

1.2 Data storage

Numbers Binary numbers (up to and including 8 bits)
Hexadecimal numbers
How to add two binary integers together / Overflow
Hexadecimal numbers
Binary shifts
Characters.
Images
Sound
Metadata

1.3 Networks

Types of network.
Factors that affect the performance of networks
Client-server and a peer-to-peer networks
The hardware needed to connect a Local Area Network
The Internet
DNS (Domain Name Server) / Hosting
The Cloud
Topologies

2.1 – Algorithms

Programming constructs -Sequence/Selection/Iteration
The use of data types

2.4 – Boolean logic

Simple logic diagrams using the operators AND, OR and NOT